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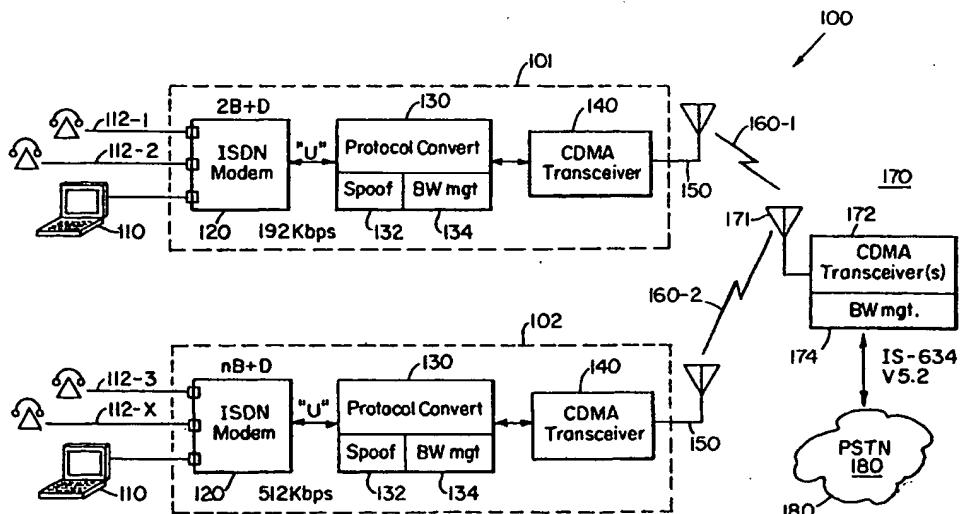
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US98/12740		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 18 June 1998 (18.06.98)		
(30) Priority Data: 60/050,338 20 June 1997 (20.06.97) US 60/050,277 20 June 1997 (20.06.97) US 08/992,760 17 December 1997 (17.12.97) US		
(71) Applicant: TANTIVY COMMUNICATIONS, INC. [US/US]; Suite 300, 2200 Front Street, Melbourne, FL 32901 (US).		(Published <i>With international search report.</i>)
(72) Inventors: GORSUCH, Thomas, E.; 530 Franklin Avenue, Indialantic, FL 32903 (US). AMALFITANO, Carlo; 705 Riverside Drive, Melbourne Beach, FL 32951 (US).		(88) Date of publication of the international search report: 25 March 1999 (25.03.99)
(74) Agents: THIBODEAU, David, J., Jr. et al.; Hamilton, Brook, Smith & Reynolds, P.C., Two Militia Drive, Lexington, MA 02173 (AU).		

(54) Title: DYNAMIC BANDWIDTH ALLOCATION TO TRANSMIT A WIRELESS PROTOCOL ACROSS A CODE DIVISION MULTIPLE ACCESS (CDMA) RADIO LINK



(57) Abstract

A technique for transmission of wireless signals across CDMA radio links. Bandwidth is allocated dynamically within a session to specific CDMA subscriber unit based upon data rate determinations. Specifically, a dynamic bandwidth allocation algorithm operates from limits calculated based upon available ports per subscriber, expected user bandwidth, and parallel user bandwidth versus throughout. Provisions for priority service, unbalanced forward and reverse spectrum utilization, voice prioritization, and band switching are also made.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 98/12740

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H04Q7/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 H04Q H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 682 423 A (AT & T CORP) 15 November 1995 see column 1, line 43 - line 57 see column 5, line 53 - column 8, line 1 see column 9, line 5 - line 11 see figure 5 --- EP 0 719 062 A (AT & T CORP) 26 June 1996 see column 1, line 39 - column 2, line 35 see column 3, line 48 - line 54 see column 4, line 31 - line 53 see column 5, line 10 - line 15 see column 8, line 37 - column 10, line 5 see claims 1-8 --- -/-/	1-5, 7, 8, 10, 11
X		1, 4, 5, 7, 8, 10, 11

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Patent family members are listed in annex.

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Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 December 1998	17/12/1998
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel: (+31-70) 340-2040. Tx. 31 651 epo nl. Fax: (+31-70) 340-3016	Authorized officer CASALS CASTANE, J

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 37081 A (ROKE MANOR RESEARCH ;DAVIS SIMON PAUL (GB)) 21 November 1996 see page 4, line 9 - page 7, line 12 see page 10, line 2 - line 5 ---	1,2,8
X	WO 96 08934 A (ALBROW RICHARD JOHN ;BLACK SIMON ALEXANDER (GB); MARTIN PAUL MAXWE) 21 March 1996 see page 2, line 4 - page 4, line 2 see page 9, line 8 - page 10, line 10 ---	10,11
A	EP 0 526 106 A (AMERICAN TELEPHONE & TELEGRAPH) 3 February 1993 see column 5, line 28 - column 9, line 23 ----	9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 98/12740

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 0682423 A	15-11-1995	US 5442625 A		15-08-1995
		CA 2145708 A		14-11-1995
		JP 8065273 A		08-03-1996
EP 0719062 A	26-06-1996	US 5592470 A		07-01-1997
		JP 8280058 A		22-10-1996
WO 9637081 A	21-11-1996	CN 1157083 A		13-08-1997
		EP 0771510 A		07-05-1997
		JP 10503357 T		24-03-1998
WO 9608934 A	21-03-1996	AU 3477995 A		29-03-1996
		BR 9508943 A		11-11-1997
		CN 1160468 A		24-09-1997
		EP 0795255 A		17-09-1997
		FI 971088 A		14-03-1997
		JP 10505969 T		09-06-1998
		ZA 9507745 A		06-05-1996
EP 0526106 A	03-02-1993	US 5463623 A		31-10-1995
		JP 2577168 B		29-01-1997
		JP 7143179 A		02-06-1995

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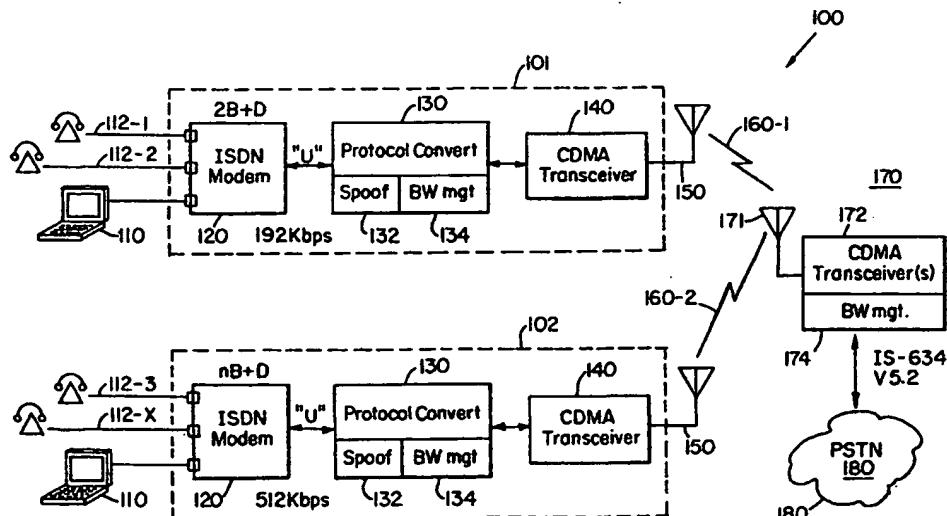


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